SOV/51-7-4-14/32

AUTHOR: Antonov-Romanovskiy, V.V.

TITLE: The Initial Stages of Luminescence Rise in Phosphors with Levels of Several Types

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 524-529 (USSR)

ABSTRACT: The author considers kinetics of emission in the initial stages of luminescence rise in the "quasi-linear" case when recombination is negligibly small (motion of electrons and holes can be considered to be independent of one another) and all free charges are produced by thermal motion (the so-called thermal charges). The latter condition occurs when the light which excites the phosphor does not produce ionization directly but leads to formation of excited states which are then dissociated thermally. This may occur when light is absorbed directly by capture centres or possibly in the region of long-wavelength fundamental absorption edge. The case of traps of one type is dealt with quantitatively. This is followed by a qualitative discussion of the case when traps of several types are present. The paper is a continuation of the work reported earlier (Ref 1) and it is entirely theoretical. There are 1 figure and 2 Soviet references.

Card 1/1

SUBMITTED: January 30, 1959

SOV/51-7-6-25/36

AUTHOR: Antonov-Romanovskiy, V.V.

TITLE: On the Superlinear Rise of Photoconductivity of a Phosphor in the Initial Stages of Excitation

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, No 6, pp 827-829 (USSR)

ABSTRACT: The author discusses the deficiencies of Tolstoy's (Ref 1) and Frerichs and Rose's (Ref 4) theories of the superlinear rise of photoconductivity with time and proposes an energy-band theory of this effect. The band scheme of a phosphor with two types of electron traps C_1 and C_2 of depths ε_1 and ε_2 ($\varepsilon_2 > \varepsilon_1$) is shown in Fig 1. It is assumed that the exciting light produces only transitions of electrons from the lower filled band Q to the C_2 levels. Optical transitions $Q \rightarrow C_1$ and $Q \rightarrow P$, where P is the empty band, are assumed to be unimportant. Under such conditions the conductivity in P will be due only to thermal transitions of electrons from C_2. The hole conductivity can be neglected if the density $\gg$ and the depth of the hole traps C are sufficiently great. It is shown that the free electron density N and consequently the phosphor photoconductivity rise linearly first with a slope $k_1 = w_2 \varkappa_2 E/(\sigma_1 \nu_1 + \sigma_2 \nu_2)$

Card 1/3

and later the slope becomes $k_2 = w_2 \varkappa_2 E / \sigma_2 \nu_2$, as shown in Fig 2. Here ν_1 and ν_2 are the densities of shallow and deep traps respectively; w_2 is the probability of thermal ejection of electrons from C_2 into P; $\varkappa_2$ is a quantity proportional to the absorption coefficient corresponding to the transition $Q \rightarrow C_2$; E is the intensity of the exciting light; σ_1 and σ_2 are the effective capture cross-sections for electrons at C_1 and C_2. The resultant curve shows the possibility of a superlinear rise of photoconductivity with time and the result is independent of whether the charges are liberated thermally or optically. If w_1 and w_2 are thermal in nature then the superlinearity would appear more clearly at high temperatures. This is because at high temperatures the transitions $Q \rightarrow C_1$ and $Q \rightarrow P$, as well as $Q \rightarrow C_2$, are possible but the contributions of the latter two are comparatively small. The $Q \rightarrow C_1$ transitions produce a linear rise of photoconductivity with time, while the transitions $Q \rightarrow P$ give a contribution which is independent of time. Since $\sigma_2 > \sigma_1$ the superlinear part of photoconductivity will decrease faster on

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810006-4"

On the Superlinear Rise of Photoconductivity of a Phosphor in the Intial Stages of Excitation

cooling than the linear portion. Thus the observation made by Tolstoy that the superlinearity requires higher activation than other processes follows naturally from the scheme shown in Fig 1. There are 2 figures and 4 references, 3 of which are Soviet and 1 English.

SUBMITTED: January 2, 1959

Card 3/3

ANTONOV-ROMANOVSKIY, V. V., DUBININ, V. G., [illegible], A. M., [illegible], E. A., FOK, M. V.

"Detection of ionization of Eu^{++} in the phosphor SvS-Eu, Sm by the paramagnetic resonance absorption method."

Physics Institute im. P. N. Lebedev, USSR Academy of Sciences.

report submitted to The Electrochemical Society, 117th Meeting - Chicago, Ill., 1-5 May 60, Symposium on Luminescence.

ANTONOV-ROMANOVSKIY, V. V., DUBININ, V. G., PROKHOROV, A. M. and TRAPEZNIKOV, Z. A.

Detection of Ionization of Eu^{++} in the Phosphor SrS-Eu, Sm by the Paramagnetic Resonance Absorption Method

V. V. Antonov-Romanovsky, V. G. Dubinin, A. M. Prokhorov, Z. A. Trapeznikova, and M. V. Fock, P. N. Lebedev Physical Institute, Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R.

When the phosphor SrS-Eu, Sm is under excitation, the paramagnetic absorption caused by Eu^{++} ions decreases appreciably (approximately to 15%). Decrease of the amount of Eu^{++} during excitation may depend either on electron trapping by Eu^{+} ion or on its further ionization, i.e., on its transition to a trivalent state. The second alternative seems to be the most probable.

Report presented at the 117th Meeting of the Electrochemical Society, Chicago, 1-5 May 1960.

AUTHOR: Antonov-Romanovskiy, V.V. SOV/51-8-1-13/40

TITLE: Stationary Luminescence of Phosphors with Several Types of Traps

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 73-80 (USSR)

ABSTRACT: The author discusses kinetics of phosphorescence under steady-state excitation in the case when weakly-filled traps differ very strongly in their depths. The problem of the charge distribution in the traps and the dependences of this distribution, of luminances of individual phosphorescence bands and of photoconductivity on temperature and intensity of excitation are solved completely. The paper is entirely theoretical. There are 1 figure and 7 Soviet references.

SUBMITTED: June 18, 1959

Card 1/1

ANTONOV-ROMANOVSKIY, V.V.

Application of diffusion theory to bimolecular reactions.
Fiz. tver. tela 3 no.6:1896-1897 Je '61. (MIRA 14:7)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR, Moskva.
(Diffusion) (Chemical reactions)

ANTONOV-ROMANOVSKIY, V.V.

Final stages of the luminescence quenching of phosphors with several kinds of levels. Opt. i spektr. 10 no.2:182-187 F '61.
(MIRA 14:2)

(Phosphors) (Luminiscence)

ANTONOV-ROMANOVSKIY, V.V.

Some particular cases of the kinetics of phosphorescence. Opt. i spektr. 10 no.2:214-219 F '61. (MIRA 14:2)
(Phosphorescence)

ANTONOV-ROMANOVSKIY, V.V.

Fluorescence curves of phosphors with comparable lengths of stay of electrons in traps of various kinds. Opt.i spektr. 10 no.5:644-648 My '61. (MIRA 14:8)
(Fluorescence) (Phosphors) (Crystal lattices)

20830
S/048/61/025/003/018/047
B104/B214

24,3500 (1137, 1138, 1395)

AUTHOR: Antonov-Romanovskiy, V. V.

TITLE: Luminescence kinetics of phosphors with several kinds of traps

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 357-361

TEXT: This paper was read at the Ninth Conference on Luminescence (Crystal Phosphors) held in Kiyev from June 20 to June 25, 1960. The existence of different kinds of electron and hole traps in a phosphor leads to non-linearity and complications in the kinetic equations of phosphorescence determined principally by the non-linearity of the recombination process. The kinetic equations can be very much simplified, however, because the traps are practically never completely filled and so the so-called saturation effect does not come into play, and because the recombination probability is much higher than the probability of a second trapping. For various reasons, the charges on excitation are distributed thermally irregularly over the different kinds of traps, and in

Card 1/4

the first stages of damping or growth of luminescence, the charges are distributed over the traps. This process is more dominant than the process of recombination. For this reason, the kinetic equation of luminescence may be considered to be linear, and the non-linearity may be taken into account by perturbation-theoretical approximations. The motion of charges on damping is treated in first approximation and on the assumption that the probabilities of liberation of charges from traps of different kinds differ among themselves to a very great extent. One of the most important consequences of the linearity of kinetics in the initial stages of de-excitation is the fact that the damping curve of the phosphor consisting of a complicated system of traps appears initially as a sum of the exponents. The initial stage of growth of luminescence may be represented in the form of sums of exponential processes but also in the form of processes that are independent of one another. From these considerations it follows that if the electron and hole traps differ essentially from each other with regard to the probability of liberation of charges localized at them and do not differ essentially in other properties, the kinetics of fluorescence can be linearly approximated by assuming low excitability, even in the case of different kinds of

traps. Completely different results are obtained if the traps of different signs differ not only in their probabilities of liberation of localized charges but also in other respects. In the case of the zinc sulfide phosphor it was detected some time ago that under certain conditions the photoconductivity of this semiconductor increases nonlinearly with the time of excitation and also the steady photoconductivity depends quadratically on the intensity of the exciting light. According to the method described above, these effects can also be treated on the basis of a semiconductor model with two types of electron levels and one type of hole level. On the assumption that the exciting light transfers the electrons from a filled band to a deeper electron trap, the photoconductivity increases nonlinearly if the hole component is negligibly small. The three-level scheme is more precisely described, and the above-mentioned nonlinear properties of the zinc sulfide phosphor are dealt with. During the discussion of the paper, N. A. Tolstoy gave a detailed reply and supported the "two-step theory" advanced by him earlier in explanation of this effect. Also during the discussion, Ch. V. Lushchik reported on experiments carried out by G. Liyd'ya and I. Yaek in Tartu. There are 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the

Luminescence kinetics of ... S/048/61/025/003/018/047
B104/B214

English-language publication reads as follows: Randall J. T., Wilkins M. H. F., Proc. Roy. Soc. A., 184, 366 (1948).

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

Card 4/4

22167
S/048/61/025/004/016/046
B104/B201

24.7900
24,3500

AUTHORS: Antonov-Romanovskiy, V. V. and Dutkin, V. G.

TITLE: Study of phosphors activated with rare earths on SrS basis with electron paramagnetic resonance

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 481-482

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors), Kiyev, June 20-25, 1960. In an earlier work (Ref. 1: Antonov-Romanovskiy et al., Zh. eksperim. i teor. fiz., 11, 1466 (1959)) the authors had used electron paramagnetic absorption to study the state of the activator. A reduction of the paramagnetic absorption of Eu^{2+} was established in the SrS-Eu,Sm phosphor on its excitation in the optical absorption band of Eu^{2+}. The diminution of paramagnetic absorption was about 15 %, which fits the decrease of the natural absorption coefficient of Eu^{2+}. In parallel thereto, the authors measured the absolute quantum numbers emitted by the excited phosphor, from which, in turn, they obtained the data regarding the change of paramagnetic absorption. These

Card 1/3

Study of phosphors...

data permit the assumption of an ionization ($Eu^{2+} \longrightarrow Eu^{3+}$) of the activator arising by the excitation of this phosphor. The effect of the flux upon the Eu concentration in the phosphor was also determined by the above-mentioned methods. Phosphor specimens with equal Eu contents in the mixtures, but partly with LiF or $SrCl_2$ as fluxes, and partly without fluxes, were examined for this purpose. Phosphors with flux were found to have a paramagnetic absorption of Eu^{2+} greater by 1.5 times than such without flux. This permits assuming that the activator concentration is by 50-40 % larger in phosphors with flux than in such without. Since all rare earth elements enter the SrS lattice as trivalent activators (exclusively Eu^{2+}), the effect of fluxes upon the trivalent activators is of interest. On phosphors SrS-Eu,Gd with and without LiF flux it has been possible to prove that the flux causes the activator concentration to grow by three times in the case of Eu, and 20 times in the case of Gd. In the SrS-Gd phosphor, the concentration of the Gd activator was found to increase by 10 times when LiF flux was added. It is assumed that the principle of charge compensation must be satisfied for the introduction of Gd^{3+} ions into the lattice. It has been further established that in the SrS-Eu,Sm phosphor only half the stored energy is liberated in the form of light on de-excita-

Card 2/3

S/048/61/025/004/016/048
B104/B201

Study of phosphors...

tion. The other half is converted into heat by recombination. In the ensuing discussion, V. V. Antonov-Romanovskiy states that the method of paramagnetic absorption is an efficient method for phosphor investigation. The principal result of the present work is said to be the detection of the $Eu^{2+} \longrightarrow Eu^{3+}$ transition. Ye. B. Aleksandrov reported on tests made on $CaSO_4$-Mn luminophore, in which it was possible to prove the occurrence of systematic modifications of Mn^{2+} absorption lines with de-excitation. It is believed that the major part of Mn in this phosphor plays no role in l light accumulation. There is 1 Soviet-bloc reference.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev, Academy of Sciences USSR)

Card 3/3

S/051/62/012/001/020/020
E032/E514

AUTHORS: Antonov-Romanovskiy, V. and Feofilov, P

TITLE: 10th conference on luminescence

PERIODICAL: Optika i spektroskopiya, v.12, no.1, 1962, 151-154

TEXT: The conference took place on June 26-July 1, 1961 in Moscow. It was dedicated to the memory of Academician S. I. Vavilov who was the founder of the Soviet luminescence school. Most of the papers read at the conference were concerned with the review and generalization of the work published in the ten years since the death of S. I. Vavilov. Problems in molecular luminescence and in the luminescence of crystal phosphors were discussed. The conference was attended by 350 delegates representing 180 organizations from many towns in the Soviet Union. The conference was opened by V.L.Levshin who reviewed the scientific activity of S. I. Vavilov and the main successes of the Soviet luminescence school during the last ten years. A. N. Sevchenko and A. A. Shishlovskiy reviewed the life and activity of S. I. Vavilov. Among the papers read at the conference were the following:
P. A. Cherenkov "The emission of radiation by particles moving

with velocities greater than the velocity of light and its application in the physics of high energy particles"
B. I. Stepanov: present state of the theory of luminescence of complex molecules.
B. Ya. Sveshnikov spoke on the present state of the theory of quenching of luminescence.
M. D. Galanin reported some new results obtained by M.N.Alentsev and L. A. Pakhomycheva on the anti-Stokes decrease in the yield of fluorescein solutions.
E. V. Shpol'skiy reviewed new results of studies of line absorption and luminescence spectra of organic substances.
B. S. Neporent reported on the effect of van der Waals forces on the effectiveness of energy transfer in collisions between complex molecules and other molecules.
V. V. Zelinskiy reported examples of correlation between the position of the fluorescent spectrum maximum on the one hand, and the fluorescence yield, the ratio of phosphorescence and fluorescence yields and susceptibility to quenching action on the other hand.
A. S. Cherkasov reported experimental facts indicating the

presence of reorientation of solute molecules near excited molecules of some derivatives of anthracene and phthalimide.
A. N. Sevchenko: "Spectro-luminescence studies of dyes belonging to the porphin series".
M. D. Galanin gave a review paper concerned with the yield and long-wavelength radi. luminescence of organic substances.
A. N. Terenin and V. L. Yermolayev reviewed work concerned with the sensitized fluorescence which was discovered by them in 1952.
V. L. Levshin: "Energy migration in solutions and the associative theory of luminescence quenching.
A. F. Prikhot'ko: "Excitons in crystals and their effect on spectra"
A. N. Zaydel spoke on the luminescence of salts of gadolinium in crystals and solutions.
P. P. Feofilov was concerned with the line luminescence of activated inorganic crystals.
A. A. Kaplyanskiy was concerned with the piezo-spectroscopic effect in ruby and its application to the generation of coherent radiation.
N. G. Basov was concerned with lazers.
Card 3/6

10th conference on luminescence S/051/62/012/001/020/020
E032/E514

V. A. Fabrikant: "On Bouguer's law".
Ch.B.Lushchik, N. Ye. Lushchik and I. V. Yaek discussed electron-vibrational processes in solutions of complex molecules in connection with the properties of crystal phosphors.
F. D. Klement: "Structure and spectra of alkali-ammonium-halide crystal phosphors".
I. A. Parfianovich and Ye. I. Shuraleva spoke on the relation between luminescence and lattice micro-defects.
M. L. Kats was concerned with new data on the absorption and luminescence of activator capture centres in alkali-halide phosphors activated with Ni, Ag and Cu.
M.U.Belyy, I. S. Gorban' and A. A. Shishlovskiy: "Photoluminescence of halide salts of heavy metals and semiconducting crystals.
V. L. Levshin: "Accumulation and transport of excitation energy in crystal phosphors".
B. M. Nosenko reported some results on the exoelectronic emission.
V. A. Sokolov and A. N. Gorban' discussed the candoluminescence of crystal phosphors.

Card 4/6

10th conference on luminescence S/051/62/012/001/020/020
E032/E514

M. V. Fok: "Properties of emission excited by electric fields".
A. M. Bonch-Bruyevich reported studies of the electroluminescence of zinc-sulphide phosphors under pulsed excitation.
F. I. Vergunas: "Photo dielectric effect in electroluminescent zinc-sulphide phosphors"
V. V. Antonov-Romanovskiy discussed the possible applications of the electron paramagnetic resonance method to the study of phosphors.
M. A. Konstantinova-Shlezinger: "Dependence of the luminescence properties of phosphors on their crystal and physico-chemical nature.
A. A. Bundel' suggested that the luminescence centres of compounds of elements belonging to groups II-VI appear during the process of thermal dissociation of the main substance or the activator compounds.
R. A. Nilender: "Work at the Moskovskiy elektrolampovyy zavod (Moscow Electric Lamp Factory) on luminescence lamps"
R. A. Nilender, V. A. Fabrikant reported measurements by F. A. Butayeva who determined the luminescence yield of lamp

Card 5/6

phosphors and found that the quantum yield of halophosphate excited by λ1850 Å is greater than 1.
L. A. Tumerman discussed the possible applications of luminescence to biological processes.
M. N. Meysel': "Luminescence cyto- and histo-chemistry".
A number of other papers were concerned with application of luminescence in chemistry and biology. A. V. Karyaki reported on the experimental study of the possible use of luminescence in the diagnosis of carcinoma.

S/048/62/026/004/003/014
B104/B102

AUTHOR: Antonov-Romanovskiy, V. V.

TITLE: Electron paramagnetic resonance study of phosphors

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 4, 1962, 460 - 462

TEXT: The problems that can be studied with the aid of electron paramagnetic resonance fall into two categories: (1) problems in connection with unexcited crystal phosphors, and (2) problems related to changes of phosphors as a result of excitation. The first category includes problems concerning the valence states of activators, the symmetries of the electric fields around ions or impurity atoms, and the effect of fluxing agents, while the second comprises ionization and trapping processes, changes in valence of activators due to excitation, and, in connection with methods of optical investigations, problems on the nature of impurity absorption and emission. The applicability and the prospects of development of electron paramagnetic resonance are demonstrated by examples from investigations carried out in the years 1948 - 61.

Card 1/2

S/048/62/026/004/003/014
B104/B102

Electron paramagnetic resonance...

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

Card 2/2

ANTONOV-ROMANOVSKIY, V.V., doktor fiz.-matem.nauk

Conference on the physics and chemistry of crystal phosphors. Vest. AN SSSR 32 no.4:103 Ap '62. (MIRA 15:5)
(Phosphors)

A'TO'OV-KHANOVSKIY, V. V.; LUSHCHIK, Ch. B.

"General Discussions of Phosphors"

Report presented at the International Conference on Luminescence, Torun, Poland, 25-29 Sept 63.

L 18425-63 EWT(1)/BDS AFFTC/ASD/ESD-3/IJP(C)/SSD

ACCESSION NR: AT3002223 S/2941/63/001/000/0207/0213

AUTHOR: Antonov-Romanovskiy, V. V. 56

TITLE: General method for investigation of thermal luminescence and bleaching curves of excited phosphors. 1

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminestsentsiya. Moscow, Izd-vo AN SSSR, 1963, 207-213

TOPIC TAGS: kinetic parameter, phosphor, bleaching, thermoluminescence

ABSTRACT: A general method has been proposed to simplify evaluation of kinetic parameters in excited phosphors. Two extreme cases are considered: the linear and the quadratic, with the imposed conditions that recombination probability should be significantly less than the probability of recurrent capture, and that saturation or quenching should be absent. In both cases the form of elementary thermoluminescence and thermal bleaching curves on double logarithmic scales depends on a single parameter. If the initial concentration of absorption centers is known, a coordinate system can be selected to reduce all thermal bleaching curves into a single form, greatly simplifying determination of kinetic parameters. Orig. art. has: 21 formulas.

Card 1/2

L 19480-63 EWT(1)/BDS--AFFTC/ASD/SSD

ACCESSION NR: AT3002224 S/2941/63/001/000/0213/0223

AUTHOR: Antonov-Romanovskiy, V. V.

TITLE: General method for investigation of thermal luminescence and bleaching curves of excited phosphors.

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminestsentsiya. Moscow, Izd-vo AN SSSR, 1963, 213-223

TOPIC TAGS: kinetic parameter, phosphor, bleaching, thermoluminescence

ABSTRACT: The general method developed in Part One by the author (Optika i spectroscopiya. Sbornik 1, str. 207, 1963) has been used to obtain curves and tables for thermal luminescence and thermal bleaching in excited phosphors. Computation results are plotted on double logarithmic scales of thermoluminescence $\bar{J}$ or thermal bleaching $\bar{n}$ versus normalized temperature θ or temperature T for various phosphors and various values of the probability parameter a, defined in Part One. Sample curves are given in the two enclosures. "The author acknowledges the help of V. V. Fok and Z. P. Kaleyev." Orig. art. has: 5 figures and 4 tables.

Card 1/1

EWT(m)/BDS--AFFTC/ASD
L 11213-63
ACCESSION NR: AP3000611 S/0181/63/005/005/1339/1344

57
57

AUTHOR: Antonov-Romanovskiy, V. V. 19

TITLE: Effective cross sections of capture and the recombination of free charges in solids

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1339-1344

TOPIC TAGS: semiconductor, crystal phosphor, ZnS, Ge, alkali halides, capture cross section, free charges, free path, conduction band, gas-kinetic cross section, diffusion cross section

ABSTRACT: The author examines four kinds of center (neutral, excess charge e, dipole with moment ae, and one with polarizability of gamma) to determine the conditions controlling the type of interaction (gas-kinetic or diffusion) between these centers and free charges. The development is theoretical, deriving from standard formulas for types of interactions and for different kinds of center. The author concludes that the gas-kinetic effective cross section is much smaller than the diffusion cross section. Lax's (Phys. Rev., 119, 1509, 1960) inability to detect large, effective cross sections may have been due to the conditions of his experiment, so that he measured the gas-kinetic, not the diffusion, cross

Card 1/2

section. This circumstance follows from the fact that the latter is large only at low temperatures, when the free path lengthens sufficiently to permit gas-kinetic conditions such that the product of cross section area and free-path length equals the reciprocal of number of centers. The author states that the effective recombination cross sections and the capture of free charges depend not only on kind of center interacting with them but also on several kinetic parameters, particularly on length of free path of mobile charges and on concentration of centers. Orig. art. has: 17 formulas and 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Institute of Physics, Academy of Sciences SSSR)

SUBMITTED: 22Dec62 DATE ACQ: 11Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 004 OTHER: 004

Card 2/2

EWT(m)/BDS--AFFTC/ASD
L 11212-63
ACCESSION NR: AP3000612 S/0181/63/005/005/1345/1347

51
50

AUTHOR: Antonov-Romanovskiy, V. V.

TITLE: The effect of an electrical field on effective cross section of recombination and capture

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1345-1347

TOPIC TAGS: capture cross section, cross section of recombination, drift current, center with excess charge, dipole center, polarizing center

ABSTRACT: This is an extension of the author's previous work (FTT, present number, p. 1339). The objective is to arrive at some approximate solution with consideration of but a single drift. Such a solution, besides being valid for a center bearing excess charge, is here shown to be valid for dipole and polarizing centers as well. The development is theoretical, the equations following from the author's previous work. He concludes that the effect of drift on the value of capture cross section can be neglected. His results indicate that the measurement of cross section in an electric field is perfectly proper, since this cross section does not vary even when diffusion kinetics are valid. Orig. art. has: 15 formulas.

Card 1/1 Inst of Physics Academy of Sciences

ANTONOV-ROMANOVSKIY, V.V.; VINOKUROV, L.A.; FOK, M.V.

Anomalous storage of light sums in phosphors. Opt. i spektr. 16 no.2:279-284 F '64. (MIRA 17:4)

L 29664-65 EWT(l) IJP(c)

ACCESSION NR: AP5001291 P/0045/64/026/03-/0521/0529

AUTHOR: Antonov-Romanovsky, V.V.; Vinokurov, L. A.; Fok, M. V.

TITLE: Luminescence of inorganic materials: the role of the stimulating action of the exciting light in phosphorescence phenomena

SOURCE: Acta physica polonica, v. 26, no. 3-4, 1964, 521-529

TOPIC TAGS: luminescence, luminescence phenomenon, crystalline phosphor, exciting light, light sum accumulation

ABSTRACT: This paper presents data on exciting light and its stimulating action in phosphorescence phenomena in crystalline phosphors. The stimulating action of exciting light is used to explain 1) the limitation of light sum accumulation [illegible] light sum limit on the wavelength of exciting light, [illegible] the decrease of [illegible] accumulation in deep traps with cooling or with increasing excitation, and [illegible] decrease [illegible] ferent intensities [illegible] explained [illegible]

Card 1/2

L 29664-65

ACCESSION NR: AP5001291

The intersection indicates that in later stages of decay the light sum accumulation ... weaker excitation ... larger than after stronger excitation ...

ASSOCIATION: P.N. Lebedev Physical Institute of the Academy of Sciences of the

VREDEN-KOBETSKAYA, T.O.; GEORGOBIANI, A.N.; GOLUBEVA, N.P.; GRIGOR'YEV, N.N.; ZHEVANDROV, N.D.; MORGENSHTERN, Z.L.; PETUKHOVA, M.S.; RABINOVICH, N.Ya.; FOK, M.V.; KHAN-MAGOMETOVA, Sh.D.; ANTONOV-ROMANOVSKIY, V.V., doktor fiz.-mat. nauk, otv. red.

[Luminescence; a bibliographic index for 1947-1961] Liuminestsentsiia; bibliograficheskii ukazatel', 1947-1961. Moskva, Nauka. Vol.2. 1964. 378 p. (MIRA 18:4)

1. Akademiya nauk SSSR. Sektor seti spetsial'nykh bibliotek.

ACC NR: AM5033665 Monograph UR/

Antonov-Romanovskiy, Vsevolod Vasil'yevich

Kinetics of the photoluminescence of crystal phosphorus (Kinetika fotolyuminestsentsii kristallofosforov) Moscow, Izd-vo "Nauka", 1966. 323 p. illus., biblio. (At head of title: Akademiya nauk SSSR. Fizicheskiy institut). 3600 copies printed.

TOPIC TAGS: luminescence, crystal phosphor, phosphorescence, solid kinetics, photoluminescence

PURPOSE AND COVERAGE: This book is intended for persons working in the field of luminescence and for students of institutes of higher education. In the first part it gives general information on crystalline phosphors, luminescence and acceptance centers, the zone system, etc. Primary attention is devoted to a detailed examination of the kinetics of phosphorescence at the beginning and the end of luminescence and during stationary luminescence. Also examined are several difficult cases of the kinetics and, in detail, the diffusion theory of phosphorescence. After a general discussion of the excitation mechanism, various types of luminescence quenching and sensitization are examined. The second part of the book is concerned primarily with methods of determining a number of kinetics parameters, e.g., the probability of releasing, recombining, and capturing electrons and of vacancies, as well as with several general problems. There are 182 references, 111 of which are Soviet.

Card 1/2 UDC: 535.37(531.1)

ACC NR: AM6033865

TABLE OF CONTENTS (Abridged):

SUB CODE: 20/ SUBM DATE: 09Apr65/ ORIG REF: 123/ OTH REF: 064/

Card 2/2

ACC NR: AP7003898 SOURCE CODE: GE/0030/67/019/001/0417/0424

AUTHOR: Antonov-Romanovskiĭ, V. V.

ORG: P. N. Lebedev Physical Institute, Academy of Sciences of the SSSR, Moscow

TITLE: Kinetics of the crystal phosphor luminescence

SOURCE: Physica status solidi, v. 19, no. 1, 1967, 417-424

TOPIC TAGS: crystal phosphor, luminescence, electron recombination, electron hole, photon, pair production

ABSTRACT: The monomolecular recombination probability is calculated for electron-hole pairs on the basis of the diffusion equation for the motion of free charges. The calculation includes short-time luminescence arising from recombination prior to the localization of the electron-hole pair and extended luminescence due to the recombination after localization. A qualtitative discussion is given of the case in which a particular photon creates more than one electron-hole pair. Orig. art. has: 3 figures and 30 formulas. [Author's abstract]

[NT]

SUB CODE: 20/SUBM DATE: 12Oct66/ORIG REF: 009/OTH REF: 001/

Card 1/1

1. ANTONOVA, A.

2. USSR (600)

4. Collective Farms

7. Brick factory is an essential part of the collective-farm system. Sel'. stroi. 2, no. 2, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

30

CA ANTONOVA, A. A.

The reinforcing effect of white soot GIPKha in native natural and synthetic rubbers. I. S. Okhrimenko and A. A. Antonova (Leningrad Tech. Inst.). *Trudy Leningrad. Tekhnol. Inst. im. Lensoveta* 1948, No. 14, 83. White soot (I) (colloidal silicic acid) prepd. by the method designated GIPKha (not described) is a good reinforcing filler for rubbers. The optimum contents of I are 10% in tau-saghyz (II) and kok-saghyz (III) natural rubbers and in steam-heated or dehydrated Sovprene synthetic rubber (IV) and 30-40% in Na-butadiene synthetic rubber (V). Wiegand's energy of elasticity, calcd. from the stress-strain curves, is greater for IV and plastic V when I is used as a filler than when lampblack is used. The energy is the same with either filler for II, III, or [illegible] free V. The values observed were 350-400 for II, III, or IV, and approx. 150 kg.-cm. per cc. for V. I gives stable vulcanizates with all the rubbers as good as those obtained with lampblack, and with IV, even better.

H. K. Livingston

ANTONOVA, A.A.

Formation under "cover" of conditioned response to stimuli of various physical strength. Trudy Inst.vys.nerv.deiat. Ser.fiziol. 1:46-54 '55. (MLRA 9:8)

1. Iz laboratorii vegetativnykh uslovnykh refleksov, zaveduyushchiy M.A.Usiyevich.

(CONDITIONED RESPONSE)

SKIPIN, G.V.; ANTONOVA, A.A.; ASLANOVA, I.F.; VINNIK, R.L.

Physiological nature of the so-called spontaneous food movements in dogs. Trudy Inst.vys.nerv.deiat. Ser.fiziol. 1:27-36 '55. (MLRA 9:8)

1. Iz laboratorii dvigatel'nykh uslovnykh refleksov, zaveduyushchiy G.V.Skipin.
(CONDITIONED RESPONSE)

ANTONOVA, A.A.; VENUS-DANILOVA, E.D.

Conversions of pinacones with substituted acetylene radicals. Part 18: Synthesis and conversions of unsym. methyldiphenylvinylacetylenylethylene glycol (2-methyl-1,1-diphenyl-5-hexen-3-yne-1,2-diol). Zhur. ob. khim. 30 no.9:2872-2877 S '60. (MIRA 13:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Hexenynediol)

ANTONOVA, A. A. Cand Chem Sci -- "Synthesis and conversions of di-tertiary alpha-glycols of the vinyl-acetylene series." Len, 1961 (Min of Education RSFSR. Len State Ped Inst im A. I. Gertsen. Chair of Organic Chem). (KL, 4-61, 186)

ANTONOVA, A.A.; VENUS-DANILOVA, E.D.

Conversionsof pinacones with substituted acetylene radicals. Part 9: Reaction of dimethylbenzoylcarbinol with vinylacetylene in the presence of sodium amide in liquid ammonia. Zhur.ob.khim. 30 no.10:3263-3267 O '61. (MIRA 14:4)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.
(Acetophenone) (Butenyne)

[illegible]

USSR/Microbiology - Antibiosis and Symbiosis. Antobiotics. F-2

Abs Jour : Ref Zhur - Biologiya, No 7, 1957, 26304

Author : Belikov, G.P., Kudryavtseva, T.T., Antonova, A.A., Gugnyayev, I.E., Kazarina, E.N.

Inst :

Title : Resistance of Dysentery Bacillus to Syntomycin, Streptomycin, and Biomycin (An Attempt at Comparative Study of Dyenteric Strains Isolated in 1953 in MOscow and Kishinev).

Orig Pub : Zh. mikrobiol., epidemiol., i immunobiologii, 1956, No 2, 35-41

Abst : Of the 800 strains of dysentery bacillus isolated in dysentery patients, 15.3% were found to be resistant to syntomycin (I). Most of the resistant strains were obtained from patients treated with I. Strains resistant to biomycin (II) and streptomycin (III) were not found. A comparative study of the sensitivity of

Card 1/2

USSR/Microbiology - Antibiosis and Symbiosis. Antibiotics. F-2

Abs Jour : Ref Zhur - Biol., No 12, 1958, 52804

Author : Belikov, G.P., Kudryavtseva, T.T., Antonova, A.A.
Inst : -
Title : The Problem of Cross Resistance of Dysentery Bacillus to Antibiotics.

Orig Pub : Zh. mikrobiol., epidemiol. i immunobiologii, 1957, 28, No 6, 116-122.

Abstract : 78 strains resistant to different doses of synthomycin (1.6, 6.25, 250 and 500 γ/ml), isolated from patients with Sonne and Flexner dysentery bacteria (39 cultures each) were selected. A study of their sensitivity to other anti-bacterial preparations-- bionycin, streptomycin, and sulfanides-- showed that strains resistant to synthomycin do not exert a cross-resistance to the agents enumerated above. In experiments on mice infected with a strain resistant to synthomycin, the latter exerted no

Card 1/2

Is Institute farmakologii i eksperimental'noy khimioterapii AMN SSSR

ANTONOVA, A.A.; VENUS-DANILOVA, E.D.

Investigation of the conversions of pinacols with substituted acetylene radicals. Report 16: Synthesis and conversions of unsym-dimethyl phenyl vinylacetylenyl ethylene glycol (2-methyl-3-phenyl-6-hepten-4-yne-2,3-diol). Trudy LTI no.60:85-91 '60.
(MIRA 14:6)

1. Kafedra organicheskoy khimii Leningradskogo tekhnologicheskogo instituta imeni Lensoveta.
(Heptenynediol)

SERKOVA, V.I.; ANTONOVA, A.A.; VENUS-DANILOVA, E.D.

New type of 2-hydroxy-2,5-dihydrofuran condensation. Zhur.ob.khim. 31 no.9:3141-3142 S '61. (MIRA 14:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Furan)

SERKOVA, V.I.; ANTONOVA, A.A.; VENUS-DANILOVA, E.D.

Conversions of pinacones with substituted acetylene radicals. Part 20: Synthesis and conversions of assym. dimethylphenylmethylmethylacetylenyl ethylene glycol. Zhur.ob.khim. 32 no.6:1771-1778 Je '62. (MIRA 15:6)

1. Leningradskiy tekhnologicheskiy institut im. Leningradskogo Soveta.

(Ethanediol) (Acetylene)

ANTONOVA, A.A.; TERENT'YEVA, T.A.

Rapid EDTA method of determining the content of the sulfate ion in potash. Stek.i ker. 19 no.12:23-24 D '62. (MIRA 16:1)

1. Leningradskiy zavod khudozhestvennogo stekla.
(Potash—Analysis) (Sulfates)

ANTONOVA, A.A.; VENUS-DANILOVA, E.D.

Transformation of pinacols with substituted acetylenic radicals. Part 21: Synthesis and transformations of asymm. dimethylphenylisopropenylacetylenyl ethylene glycol. Zhur. ob. khim. 34 no.7:2187-2189 Jl '64 (MIRA 17:8)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

KHEIFETS, L.B.; SAIMIN, L.V.; LEYTMAN, M.Z.; KUZ'MINOVA, M.L.; VASIL'YEVA, A.V.; SLAVINA, A.M.; LEVINA, L.A.; Prinimali uchastiye: PAVLOVA, Ye.A.; ANTONOVA, A.A.; PLETNEVA, O.G.; ABDUSAMATOV, M.A.; GAL'PERIN, I.P.; NEMTSOVA, V.K.; ADUYEVA, N.I.

Comparative evaluation of the reactogenicity and effectiveness of vaccines intended for the prevention of typhoid fever and paratyphoid fever B; basic materials of the epidemiological experiment in 1962. Zhur. mikrobiol., epid. i immun. 42 no.7:58-64 Jl '65. (MIRA 18:11)

1. Moskovskiy institut vaktsin i syvorotok imeni Mechnikova (for Pavlova, Antonova). 2. Tashkentskiy institut vaktsin i syvorotok (for Pletneva, Abdusamatov). 3. Ashkhabadskiy institut epidemiologii, mikrobiologii i gigiyeny (for Gal'perin, Nemtsova). 4. Gor'kovskiy institut epidemiologii, mikrobiologii i gigiyeny (for Aduyeva).

L 10670-67 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6029922 (A) SOURCE CODE: UR/0413/66/000/015/0089/0089

INVENTORS: Korshak, V. V.; Vinogradova, S. V.; Antonova-Antipova, I. P.

ORG: none

TITLE: Method for obtaining polyarylates. Class 39, No. 184446

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 89

TOPIC TAGS: polyaryl plastic, phenol carboxylic acid, polymerization

ABSTRACT: This Author Certificate presents a method for obtaining polyarylates from chloroanhydrides of aromatic dicarboxylic acids and bisphenols. To obtain colored polyarylates, the following bisphenol dyes are used in the process: fluorescein, alizarin, quinizarin, 2,2'-, and 4,4'-azophenols.

SUB CODE: 07,11/ SUBM DATE: 06Jun63

Card 1/1 UDC: 678.673'52'52

L 27094-66 EWT(m)/EWP(j) RM

ACC NR: AP6017399 SOURCE CODE: UR/0062/65/000/007/1309/1309

AUTHOR: Nesmeyanov, A. N.; Anisimov, K. N.; Kolobova, N. Ye.; Antonova, A. B. 40 B

ORG: Institute of Organoelemental Compounds AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Reaction of manganese chloropentacarbonyl with trichlorogermanium

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1965, 1309

TOPIC TAGS: manganese compound, germanium compound, IR spectrum, absorption band

ABSTRACT: Bimetallic compounds of carbonyls of transition metals with group IV metals are obtained by reaction of the sodium salt of the metal carbonyl with the halogenide derivative of a group IV metal. The authors carried out a new reaction of manganese chloropentacarbonyl with trichlorogermanium for the series of metal carbonyls: $Cl_3GeH + ClMn(CO)_5 \rightarrow Cl_3GeMn(CO)_5 + HCl$. The reaction was carried out in tetrahydrofuran with gradual rise in temperature from 20 to 60°C during the course of one hour. The manganopentacarbonyltrichlorogermanium, obtained with a 40% yield, is a white crystalline compound with b. p. 168.5 - 169°C, insoluble in water, soluble in petroleum ether, benzene, and other organic solvents, sublimating in vacuum, and stable in air. The infrared spectrum of the compound contained intensive absorption bands in the region characteristic of carbonyl groups bound with metal, 2030 and 2130 cm^{-1}; bands were present in the region of 400 and 453 cm^{-1}, corresponding to Ge-Cl bonds in compounds with the $GeCl_3$ groupings. Orig. art. has: 1 formula. [JPRS] 2

SUB CODE: 07, 20 / SUBM DATE: 23Apr65 / ORIG REF: 002

Card 1/1 UDC: 661.668+546.711/717

DAVANKOV, A.B.; ZUBAKOVA, L.B.; ANTONOVA, A.B.

Preparation and chemical conversion of macro-molecular tertiary amines into quaternary pyridine bases. Zhur. prikl. khim. 34 no.5:1110-1116 My '61. (MIRA 16:8)

(Amines) (Pyridine)

NESMEYANOV, A.N.; ANISIMOV, K.N.; KOLOBOVA, N.Ye.; ANTONOVA, A.B.

Reaction of manganese chloropentacarbonyl with trichlorogermane. Izv. AN SSSR. Ser. khim. no.7:1309 '65. (MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

NESMEYANOV, A.N.; ANISIMOV, K.N.; KOLOBOVA, N.Ye.; ANTONOVA, A.B.

Phenylgermanium derivatives of manganese carbonyl. Izv.AN SSSR. Ser.khim. no.1:160-162 '66. (MIRA 19:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR. Submitted May 11, 1965.

L 36986-66 EWT(j)/EWT(m) RM

ACC NR: AP6009509 SOURCE CODE: UR/0062/66/000/001/0160/0162

AUTHOR: Nesmeyanov, A. N./ Anisimov, K. N./ Kolobova, N. Ye./ Antonova, A. B.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Phenylgermanium derivatives of manganese carbonyl

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 160-162

TOPIC TAGS: manganese compound, phenyl compound, germanium compound, chemical synthesis, organogermanium compound

ABSTRACT: This investigation is devoted to the synthesis of phenylgermanium derivates of manganese carbonyl $(C_6H_5)_{4-n}GeBr_n - nNaMn(Co)_5 \rightarrow (C_6H_5)_{4n}Ge[Mn(CO)_5]_n + nNaBr$, where n = 1 or 2, and to a study of certain of their properties. As a result of the reactions of the sodium salt of manganese carbonyl with halogenated phenylgermanium derivatives, the authors synthesize the bimetallic compounds $(C_6H_5)_3GeMn(CO)_5$, $(C_6H_5)_2Ge[Mn(CO)_5]_2$, and $(C_6H_5)_2(CO)_5Mn\,GeGe\,Mn(CO)_5](C_6H_5)_2$.

By substituting CO-groups into the bimetallic compounds for phosphines,

Card 1/2 UDC: 542.91+547.1'3

[redacted], L. I.--"Investigation of Processes of Tying Up and the Qualities of Stockings Made of Thin Interwoven Material." Min Higher Education USSR. Moscow Textile Inst. Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya letopis'
No 2, 1956.

MAYYER, K.K., kand.tekhn.nauk; ANTONOVA, A.I., kand.tekhn.nauk

Intensify the control of working surfaces of needles and dividers in automatic circular hosiery machines. Leg.prom. 18 no.12:30-31 D '58. (MIRA 11:12)

(Knitting machines)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12, 15-57-12-17323
p 94 (USSR)

AUTHORS: Shchekin, V. V., Morozova, O. Ye., Antonova, A. I.

TITLE: Evaluating the Uniformity and Size of Active Surface of Alumosilicates (Ob otsenke odnorodnosti i velichiny aktivnoy poverkhnosti u alyumosilikatov)

PERIODICAL: Tr. In-t nefti AN SSSR, 1956, Nr 8, pp 100-106

ABSTRACT: The authors propose a method for evaluating the uniformity and size of active surfaces of alumosilicate catalysts. This method is based on utilizing kinetic relations observed on the deactivated catalysts. The authors point out that strong organic bases, while deactivating the surfaces of alumosilicates, also lower their activity in regard to isomerization, polymerization, cracking and redistribution of hydrogen; these facts indicate that active centers for all these reactions act similarly. Amounts of organic bases necessary for a full deactivation of a catalyst were

Category USSR B-9

Abs Jour Zh--Kh, No 3, 1957, 7589

Author Shchekin, V. V., Molchanova, S. I., and Antonova, A. I.
Inst Petroleum Institute of the Academy of Sciences USSR
Title On Changes in the Activity and Selectivity of Aluminosilicate Catalysts

Orig Pub: Tr. In-ta Nefti AN SSSR, 1956, Vol 8, 107-113

Abstract: The activity of synthetic aluminasilicate catalysts (K) is reduced less by carbonization in the redistribution of hydrogen in cyclohexane (1) than in the isomerisation of cyclohexane (2). Preliminary poisoning of K with pyridine or quinoline reduces the pentamethylenes yield to a greater extent than the carbonisation of K. Decreasing the pore size of K has a more beneficial effect in the case of reaction (1) than in the case of reaction (2). It has been

Card 1/2 38

Category: USSR B-9

Abs Jour: Zh--Kh, No 3, 1957, 7589

noted that the change in selectivity caused by the carbonisation of K may be caused by external diffusive complications or by the preferential closing of small pores. The authors recommend the utilisation of K with large pores for the attainment of optimal isomerisation product yields. A method is described for the determination of six- and five-membered cycloalkanes and cycloalkenes in the reaction mixture.

Card : 2/2 -39-

PEREL'MAN, A.I.; ANTONOVA, A.I.

Determination of hexavalent chromium in catalysts for polymerization of olefins. Zhur.anal.khim. 16 no.6:729-730 N-D '61. (MIRA 14:12)

1. Institute of Petroleum-Chemical Synthesis, Academy of Sciences U.S.S.R., Moscow.
(Chromium--Analysis)
(Olefins)

5(3) SOV/64-59-4-3/27

AUTHORS: Shatalov, V. P., Popova, Ye. N., Zenina, T. N., Antonova, A. K., Khlopotunov, G. F.

TITLE: Synthesis of Hydrogen Peroxide of Diisopropyl Benzene and Investigation of Its Initiating Properties in the Process of the Production of Butadiene Styrene Rubber SKS-30A (Sintez gidroperekisi diizopropilbenzola i ispytaniye yeye initsiiruyushchikh svoystv v protsesse polucheniya butadiyen-stirol'nogo kauchuka SKS-30A)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 4, pp 13 - 15 (USSR)

ABSTRACT: It was already noticed that an acceleration of the polymerisation (P) is effected by the application of diisopropyl benzene hydrogen peroxide (I) instead of isopropyl hydrogen peroxide as oxidizing agent in the synthesis of butadiene-styrene rubber (Ref 2). The investigations mentioned in the title were begun in the VNIISK. The oxidation took place in a special apparatus (Fig 1) at 110-112° on adding 1.0% "giperiz" (g), 0.07% caustic soda and an air supply of 100-120 l/hour (per liter (II)). During 8-9 hours 22-28% (II) are transformed into (I) (Fig 2, curve of the function of the concentration of (II) of the oxidation duration). An increase of the amount of lye by 0.05% accelerates

Card 1/2

Synthesis of Hydrogen Peroxide of Diisopropyl Benzene and Investigation of Its Initiating Properties in the Process of the Production of Butadiene Styrene Rubber SKS-30A SOV/64-59-4-3/27

the process by 15-20% (Fig 3). On adding 5% hydrogen peroxide without lye 25-30% (II) are transformed into (I) during 10-14 hours. Two methods of concentrating (I) were tested - a steam- and a high-vacuum distillation. The first yields at given conditions up to 90% (I), the latter 65-70% (I). Investigations of the initiating properties of (II) on the (P) according to the prescription SKS-30A show that (P) takes place by 15-20% more quickly with (I) than with isopropyl hydrogen peroxide and with tert-butylisopropyl benzene approximately as quickly as with (I) (Table 2). The application of diisopropyl monohydrogen peroxide instead of (g) permits an increase of the (P)-rates by 15-20% and a decrease of the Nekal-addition in the SKS-30A-prescription by approximately 6% without effecting a deterioration of the yield or quality of the rubber. There are 3 figures, 3 tables, and 5 references, 2 of which are Soviet.

Card 2/2

37683

S/638/61/003/000/001/005
D296/D307

27.1220

AUTHORS: Minayev, P.F., Antonova, A.M., Kantorova, V.I., Logvinova, O.F., and Mironova, A.P.

TITLE: Changes in the central nervous system after exposure to ionizing radiation

PERIODICAL: Trudy Tashkentskoy konferentsii po mirnomu ispol'zovaniyu atomnoy energii, v. 3, Tashkent, Izd-vo AN Uzb. SSR, 1961, 53 - 58

TEXT: In continuation of earlier work the authors studied in greater detail changes in the nucleic acid content and histological changes in the cerebellum of guinea pigs after localized exposure to X rays. The DNA and RNA contents of the of the cerebellum (mean values in mg % for wet tissue) was estimated in 108 guinea pigs immediately after the exposure (i.e. before the appearance of cerebellar disorders); after 3-4 hours (initial phasis of changes); after 24 hrs. (peak of changes), as well as after 10, 15, 20 and 30 days; (period of gradual restoration). Immediately after the exposure the nucleic acid content appeared to be unchanged; after 3-4 hours a slight de-

Card 1/3

(10-22 days) the cerebellum was of smaller size and of gritty consistency; it was covered by superficial hemorrhages and contained necrotic areas, clearly demarcated against the healthy tissue. Slightly changes or ectopic Purkinje cells still occurred. After exposure to 16,000 r the changes were of similar character but more intensive There is 1 table.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR (Institute of Biological Physics, AS USSR)

Card 3/3

S/079/62/032/009/007/011
I048/1242

AUTHORS: Novikov, I.N., Antonova, A.M., Zhilina, R.I., Furtichova, R.P., Shatalov, V.P., and Zavgorodniy, S.V.

TITLE: Synthesis and autooxidation of isopropylcyclohexylbenzene

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 9, 1962, 2954-2957

TEXT: Experiments on the cycloalkylation of isopropylbenzene by cyclohexanol in the presence of sulfuric acid and the oxidation of the product thereof are described. The relative amounts of reagents taken for the alkylation varied from an isopropylbenzene/sulfuric acid molo ratio of 2:3 to 3:1.5 with 1 mole of cyclohexanol. The isopropylbenzene and sulfuric acid were mixed first, the cyclohexanol was added slowly (during 2.5-3 hrs) and the reaction was continued with stirring for another 4-5 hrs. The end of the reaction was indicated by a constant value of the refraction index of the organic phase. The main reaction product was isopropylcyclohexylbenzene; its yield was highest (81.2%) when the reagents were taken

S/079/62/032/009/007/011
I048/I242

Synthesis and autooxidation...

in the ratio isopropylbenzene/sulfuric acid/cyclohexanol = 3/3/1, and lowest (48.4%) when this ratio was 3:1.5:1. Variations in the temperature, within the range 10-40°C, had no significant effect on yield. The yield of by-products (isopropyldicyclohexylbenzenes, cyclohexene polymers) varied between 10.2 and 23.5%. A chromatographic analysis showed that the isopropylcyclohexylbenzene is a 16:21:63 mixture of the O-, m-, and p-isomers. The isopropylcyclohexylbenzene was oxidized in air, at 110°C, in the presence of a small amount of an initiator (e.g., 1 wt % isopropylbenzene hydroperoxide) and a small amount of alkali (e.g., 0.1 wt % NaOH); the total yield of hydroperoxides varied between 67.0 and 71.5%, after a reaction time of 28-49 hrs. Among the hydroperoxides separated from the reaction product by extraction with NaOh were: n-isopropylcyclohexylbenzene dihydroperoxide (m.p. 105-106°C) and n-isopropylcyclohexylbenzene monohydroperoxide (m.p. 56-57°C). There are 2 figures and 2 tables.

Card 2/3

ACCESSION NR: AT3013144 S/3018/63/000/000/0561/0571

AUTHOR: Minayev, P. F.; Chukrova, A. I.; Antonova, A. M.

TITLE: Functional, biochemical, and morphological changes in irradiated nervous tissue

SOURCE: Tret'ya Vsesoyuznaya konferentsiya po biokhimii nervnoy sistemy. Sbornik dokladov, Yerevan, 1963, 561-571

TOPIC TAGS: irradiated nerve tissue, X-irradiation, cerebellum nerve tissue, nervous tissue radioresistance, protective substance, nembutal, hexonium, alinamine (thiamin-propyldisulfide), oxidative phosphorylation, oxidation process, cerebellum radiation damage, morphological change, preventive radiation treatment

ABSTRACT: Guinea pigs and dogs were treated with a complex of protective substances before irradiation to determine whether resistance of nervous tissue to ionizing radiation can be increased. The following substances were introduced parenterally into animals 30 min before irradiation of the cerebellum: 30 mg/kg nembutal, 2 mg/kg vitamin B_1 or alinamine (thiamin-propyldisulfide), 3 mg/kg hexonium. In some cases the protective substances were introduced

Card 1/3

ACCESSION NR: AT3013144

2 days earlier and repeated 30 min before irradiation. The cerebellum was irradiated locally with a 9000 r dose for guinea pigs and a 20,000 dose for dogs (RUM-3 unit, 112.5 r/min, focal length 23-24 cm). Animals were decapitated and brains were removed to investigate the oxidative phosphorylation process in the mitochondrions of the cerebellum. Histological investigations were also made. It was found that in control animals oxidative phosphorylation radiation damage is highest 2 days after irradiation at the same time that edema of the cerebellum develops and serious morphological changes take place in the cerebellum nerve cells. Cerebellum radiation damage including oxidative phosphorylation is sharply reduced in experimental animals treated with alinamine (thiamine-propyldisulfide) together with nembutal and hexonium before irradiation. It should be noted that alinamine, a vitamin B_1 derivative, penetrates the nerve cells better than vitamin B_1 and is more effective in increasing nerve cell radioresistance. Histological investigations reveal that morphological changes are reduced in irradiated nerve cells of animals treated with protective substances. Nerve tissue functions can be preserved by protecting nerve tissue oxidation processes from radiation. Results for treatment with a complex of protective substances suggest a

Card 2/3

ACCESSION NR: AT3013144

possible application in brain tumor X-ray therapy. Orig. art. has: 8 figures, 2 tables.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moskva (Institute of Biological Physics, AN SSSR)

SUBMITTED: 00	DATE ACQ: 28Oct63	ENCL: 00
SUB CODE: AM	NO REF SOV: 009	OTHER: 002

Card 3/3

L 22023-66 EWT(m)/EWP(j)/T IJP(c) GS/RM
ACC NR: AT6005938 (A) SOURCE CODE: UR/0000/63/000/000/0050/0060

AUTHORS: Shatalov, V. P.; Zhilina, R. I.; Furtichova, R. P.; Antonova, A. M.; Popova, Ye. N.; Semilutskaya, A. A.

ORG: Laboratory for the Chemistry of High-Molecular-Weight Compounds, Voronezh State University (Laboratoriya khimii vysokomolekulyarnykh soyedineniy Voronezhskogo gosudarstvennogo universiteta); TsNIL Voronezh Plant SK im. S. M. Kirov (TsNIL voronezhskogo zavoda SK)

TITLE: Synthesis of hydroperoxides and the study of their initiating properties in the process of emulsion polymerization of mixtures of butadiene and styrene

SOURCE: Voronezh. Universitet. Laboratoriya khimii vysokomolekulyarnykh soyedineniy. Trudy, no. 2, 1963. Monomery, khimiya i tekhnologiya SK (Monomers, chemistry, and technology of synthetic rubber), 50-60

TOPIC TAGS: butadiene, styrene, copolymerization, organic oxide, emulsion polymerization, hydrocarbon, hydroperoxide

ABSTRACT: It was the object of this investigation to synthesize a number of halogen-containing organic hydroperoxides and the hydroperoxides of cymene, methane, 1,1-diphenyl-ethane and its derivatives, and to study the initiating properties of the synthesized compounds on the copolymerization reaction of butadiene and styrene. The various hydroperoxides were obtained by first synthesizing the corresponding hydrocarbons and then by subjecting the hydrocarbons to autooxidation. The following

Card 1/2

L 22028-66
ACC NR: AT6005938 2

hydrocarbons and halohydrocarbons were synthesized: cymene, p-methane, 1,1-diphenylathane, 1-phenyl-1-ethylphenylethane, 1-phenyl-1-cumene-ethane, chlorocumene, isopropylchlorocumene, bromocumene, isopropylbromocumene, and fluorocumene. The reaction yields and the characteristic physical constants for the synthesized compounds are tabulated. The initiating properties of the hydroperoxides in the copolymerization reaction of butadiene and styrene were studied in the presence of two redox systems: a) trilon B-rongalite-ferrous sulfate-hydroperoxide, and b) hydroquinone-sodium sulfite-ammonia-hydroperoxide. A 70% solution of Nekal and potassium soap of synthetic fatty acids or a mixture of potassium and sodium soaps of hydrated rosin and synthetic fatty acids (C_{10} - C_{16}) served as emulsifier. The experimental results are tabulated. It is concluded that the more active hydroperoxides produce the hardest rubbers which, when vulcanized, yield vulcanizates of high strength. 15 15 49 66
Orig. art. has: 3 tables.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 016/ OTH REF: 001

Card 2/2 Ada

KLEYNMAN, G.N.; ANTONOVA, A.I.; DMITROVA, O.A. (Odessa)

Treatment of lupus tuberculosis. Vrach.delo supplement '57:21-22
(MIRA 11:3)

1. Ukrainskiy lyuposoriy.
(LUPUS)

ANTONOVA, A.S.

Develop a single method for standardizing the operations of cutting leather. Leg.prom. 18 no.11:17-20 N '58.
(MIRA 11:12)
(Shoe manufacture)

ANTONOVA, A.V.; FERFIL'YEV, V.M.

Moisture resistant wallpaper with film coating. Bum. prom. no.2: 21-23 F '64. (MIRA 17:3)

1. Moskovskaya oboynaya fabrika.

TITOV, V.I.; OSIKO, Ye.P.; ANTONOVA, E.A.

Determination of the magnitude of random errors in chemical analysis of geological samples. Zav.lab. 29 no.3:316-321 '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.
(Mineralogical chemistry)
(Errors, Theory of)

SOV/112-59-17-35849

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 17, p 16 (USSR)

AUTHORS: Privezentsev, V.A., Mayofis, I.M., Antonova, E.R.

TITLE: Enamel Varnishes on the Base of Polyurethan

PERIODICAL: Kabel'n. tekhnika, 1957, Nr 1-2, pp 30-34

ABSTRACT: The chemistry and technology of production of polyurethan enamel varnishes, developed by the authors in NIIKP, as well as the results of studies of enameled wires produced with these varnishes are described. Polyurethan enameled wires have a high heat resistance and are considerably superior in this respect to viniflex enameled wires. After having spent 25 days at 150°C the new enameled wires withstand winding on their own diameter without any damage to the enamel, whereas the viniflex enamel film begins to lower the elasticity already after having been exposed to 150°C for one day. Thus the new enameled wires can be classified under class B by their lasting heat resistance. The same studies show very high electro-insulating properties; in this respect the polyurethan enameled wires are superior to all other enameled wires with synthetic varnishes. Furthermore, the polyurethan enameled wires can be tinned with Sn or its alloys without trim-

Card 1/2

ming the enamel and without using fluxes, which is also their considerable advantage, as compared with other enameled wires (comp. ref. 35851). This advantage can with particular effectiveness by utilized when HF-stranded wires (Litzendraht) are used, the trimming and soldering of which presented very great technological difficulties until recently. There are 5 references.

V.A.P.

ANTONOVA, A.S.

Methods for establishing production standards for sewing assembly lines in shoe enterprises. Kozh.-obuv.prom. 2 no.3:7-12 Mr '60. (MIRA 14:5)
(Shoe manufacture---Production standards)

ANTONOVA, A.S.

Technical requirements in regard to the fillers for the production of graphite pencils. Trudy IGEM no.95:110-112 '63. (MIRA 16:12)

VERKHOVSKIY, Ya.F.; ANTONOVA, A.I.; BAKHTIN, N.A.

Groups for analyzing terminal documentation. Avtom., telem. i svyaz' 9 no.12:32-34 D '65.

(MIRA 19:1)

1. Glavnyy inzh. otdela signalizatsii i svyazi Gor'kovskoy dorogi (for Verkhovskiy). 2. Starshiy inzh. otdela signalizatsii, tsentralizatsii, blokirovki i svyazi Kazakhskoy dorogi (for Antonova). 3. Starshiy inzh. dorozhnoy laboratorii otdela signalizatsii, tsentralizatsii, blokirovki i svyazi Kazakhskoy dorogi (for Bakhtin).

L 1283-66 EWT(1)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023601 UR/0000/65/000/000/0326/0334

AUTHOR: Antonova, A. Ye.; Yershkovich, A. I.; Shabanskiy, V. P. 26 24

TITLE: Formation of radiation belts as a result of particle drift deep into the magnetosphere

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 326-334

TOPIC TAGS: radiation belt, neutron albedo, geomagnetism, particle production

ABSTRACT: Measurements made by the "Relay-1" satellite indicate that the intensity of trapped protons with energies greater than 34 Mev varies during magnetic storms as if the particles were drifting toward the earth. The authors consider two mechanisms which may be responsible for such a drift: 1) deviation of the third invariant due to a sudden change in the amplitude symmetry of the geomagnetic field with subsequent gradual restoration and 2) the action of hydromagnetic waves. Assuming that the first and second invariants remain constant during particle drift, the

Card 1/3

L 1283-66

ACCESSION NR: AT5023601

betatron mechanism is responsible for motion of the particles to magnetic shells with lower McIlwain L parameters. To determine the spatial distribution of particle intensity, an equation of continuity must be solved, assigning definite mechanisms for particle production and annihilation. The authors evaluate the effectiveness of the albedo neutron source, assuming for simplicity that particle drift to shell L_1 takes place instantaneously. It is found that the albedo neutron source cannot be of considerable importance in formation of the Davis protonosphere. However, this source may be responsible for the relativistic electron belt. If electron drift toward the earth is fast enough, the albedo neutron source may cause the observed intensity of relativistic electrons within a time much less than the lifetimes as determined by ionization losses. Since the power of the neutron source was found to be insufficient for the observed proton intensity, the authors evaluate the effect of proton drift toward the earth from the layer between the magnetosphere and the leading edge of the standing shock wave. A comparison of experimental and theoretical results shows that the proton drift source may be responsible for the observed intensity in the proton belt. It is pointed out that drift of solar protons with energies of the order of a few hundred kev to magnetic shells with $L \sim 1.5$ may be responsible for a certain number of high-energy protons in the inner belt. However, evaluation of this source requires spectral measurements of solar protons with

Card 2/3

L 1283-66
ACCESSION NR: AT5023601

energies of several hundred kev outside the magnetosphere. Orig. art. has: 3 figures, 1 table, 26 formulas. [14]

ASSOCIATION: none

SUBMITTED: 02Sep65 ENCL: 00 SUB CODE: ES, NP

NO REF SOV: 006 OTHER: 008 ATD PRESS: 4102

Card 3/3

AUTHOR: Privezentsev, V.A., Doctor of Technical Sciences, Professor, and Mayofis, I.M. Candidate of Technical Sciences, Antonova, E.R., Engineer.

TITLE: Enamelled Wires Based on Polyurethanes. (Emalirovannyye provoda na osnove poliuretanov)

PERIODICAL: Vestnik Elektropromyshlennosti, 1957, Vol.28, No.12, pp. 7 - 10 (USSR).

ABSTRACT: Polyesters and polyurethanes are among the high molecular weight compounds that have been used in the development of new enamels. Polyurethanes, which are of great interest for the manufacture of insulating enamel, are polymerisation products of di-isovyanates with hydroxyl compounds. Enamelled wires based on polyurethane lacquers manufactured from Soviet raw materials have been developed in the Scientific Research Institute of the Cable Industry (NII KP). The best di-isocyanates are aromatic ones, like toluilene di-isocyanate, which is now being manufactured at a chemical works. Materials used for the manufacture of enamels should contain not less than 3 hydroxyl groups. For example, glycerine hexanetrial and pentaerythrite are suitable. In order to obtain polyurethanes, these compounds are first esterified with dibasic organic acids such as adipinic

 or phthaleic. In the manufacture of lacquers, use was made of

results indicate that the wires could operate under more severe conditions than vinyflex. The results of insulation resistance measurements made at different relative humidities on enamelled wires based on polyurethane and vinyflex are given in Figs. 2 and 3 and show the polyurethane to be superior. Enamels based on polyurethane can be dyed in various colours. Production testing of polyurethane enamelled wires at a works of the Automobile and Tractor Electrical Equipment Industry (ATE-1) gave positive results which are described. These wires are also recommended to the radio industry, for the manufacture of high-frequency apparatus. To get a smooth finish on fine wires, special lacquers and resins are mixed with those based on polyurethane. The results of ageing tests on wires at 150 °C with enamels containing different proportions of polyurethane and polyvinyl acetate are given in Fig.4. Wires insulated with polyurethane enamel can be tinned without first removing the enamel. This was assessed in the apparatus shown in Fig.5, which showed that for satisfactory tinning the solder should be at a temperature of 320 - 360 °C, and that the higher the temperature the shorter the process. There are 5 figures.

Enamelled Wires Based on Polyurethanes

110-12-3/19

ASSOCIATION: NII KP.
SUBMITTED: April 12, 1957
AVAILABLE: Library of Congress
Card 4/4

ANTONOVA, G.

Our swine farm is strengthened. p. 26.
KOOPERATIVNOE ZVENEDELIE, Sofiya, Vol. 11, no. 1, Jan. 1956.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6 June 1956, Uncl.

ANTONOVA, O.

Experiment of mechanizing primary accounting in industry. Biul. nauch.inform.t trud i zar.plata no.6:31-35 '59. (MIRA 12:9)

(Machine accounting)

DUBOVENKO, A., inzh.; FEDOROV, V., inzh.; TURCHANNIKOV, I., inzh.; KIRZHNER, Yu., inzh.; OBUKHOV, N., inzh.; ANTONOVA, G., inzh.; ANTIPENKO, I., inzh.

An-RM; Grashd. av. 22 no.12:11-14 D '65. (MIRA 18:12)

L 24808-66 EWT(d)/EWT(l)/EWT(m)/... RD

ACC NR: AP6013420 SOURCE CODE: UR/0084/65/000/012/0011/0014

AUTHOR: Dubovenko, A. (Engineer); Fedorov, V. (Engineer); Turchannikov, I. (Engineer); Kirzhner, Yu. (Engineer); Obukhov, N. (Engineer); Antonova, G. (Engineer); Antipenko, I. (Engineer)

ORG: none

TITLE: An-2M agricultural aircraft

SOURCE: Grazhdanskaya aviatsiya, no. 12, 1965, 11-14

TOPIC TAGS: agricultural machinery, aircraft/ An-2M aircraft

ABSTRACT: A comprehensive composite article dealing with the extensive modifications made on the An-2 aircraft to develop a new agricultural aircraft, the An-2M, leads off with a detailed discussion of internal power-takeoff capabilities (mechanical and electrical) and agricultural-chemical capacities and dispersion characteristics. Mention is made of increased wing area, new front-landing-gear placement, new instrumentation, improved electrical equipment, a new propeller, and many other changes. Original (An-2) and replacement (An-2M) equipment is discussed in detail, along with cockpit conditioning equipment and characteristics. Chemical spraying and dispersion equipment is described in detail. Orig. art. has: 6 figures and 1 table. [LB]

SUB CODE: 01/ SUBM DATE: none

Card 1/1

ANTONOVA, G.D.

Use of underground waters for water supply and irrigation in the Golodnaya Steppe. Mat. po proizv. sil. Uzb. no.15:307-315 '60. (MIRA 14:8)

1. Uzbekskiy gidrogeologicheskiy trest.
(Golodnaya Steppe—Water supply)

[illegible], [illegible] --

"F[illegible] [illegible] of Low Buildings [illegible] Sandy [illegible]." Cand Tech Sci, Leningrad Inst of Railroad Transport Engineers, Leningrad, 195[illegible]. ([illegible]n'ekh, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (1[illegible])

SO: Sum. No. 481, 5 May 55

ANTONOVA, O.G., kand. tekhn. nauk; PITLYUK, D.A., inzh.

Erecting buildings on soils consolidated by sand piles. Miul. tekh. inform. po stroi. 5 no.7:23-24 Jl '59. (MIRA 12:10)
(Soil stabilization) (Foundations)